

Abstract of the Disclosure

A base film of a hard magnetic film containing Co as a structural element has a crystal metal base film such as a Cr film formed on the main surface of a substrate and a reactive base film (mixing layer) formed between the substrate and the crystal metal base film and having a reactive amorphous layer containing a structural element of the substrate and a structural element of the crystal metal base film. A hard magnetic film containing Co as a structural element is formed on the crystal metal base film. With the crystal metal base film such as the Cr film formed on an amorphous layer, a hard magnetic film with a bi-crystal structure can be obtained with high reproducibility. With the hard magnetic film, magnetic characteristics such as coercive force  $H_c$ , residual magnetization  $M_r$ , saturated magnetization  $M_s$ , and square ratio  $S$  can be improved without need to use a thick base film. The hard magnetic film containing Co as a structural element is applied to a bias magnetic field applying film of a magnetoresistance effect device and a record layer of a magnetic record medium.